

State of Nevada Conservation Credit System Sage Grouse Habitat



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Wetland Science Technology Mining Economics Regulatory Compliance

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What's 7Q10?

Why 7Q10.

Introduction



2013

Introduction



- **BASIS:**
- 500 Projects (300 in Nevada)
- Experts in Science and Regulatory
- We understand the data
- **This is what we do.**



Habitat at Ground Level

Introduction



**Draft Proposed Sage Brush Habitat Mitigation Banking Strategy
One Potential Solution to Increase Sage Brush Ecosystems for Lands within
Nevada - Revision 2**

Respectfully Submitted To:

State of Nevada
Office of Governor Brian Sandoval
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Agency Liaison
101 North Carson Street
Carson City, Nevada 89701

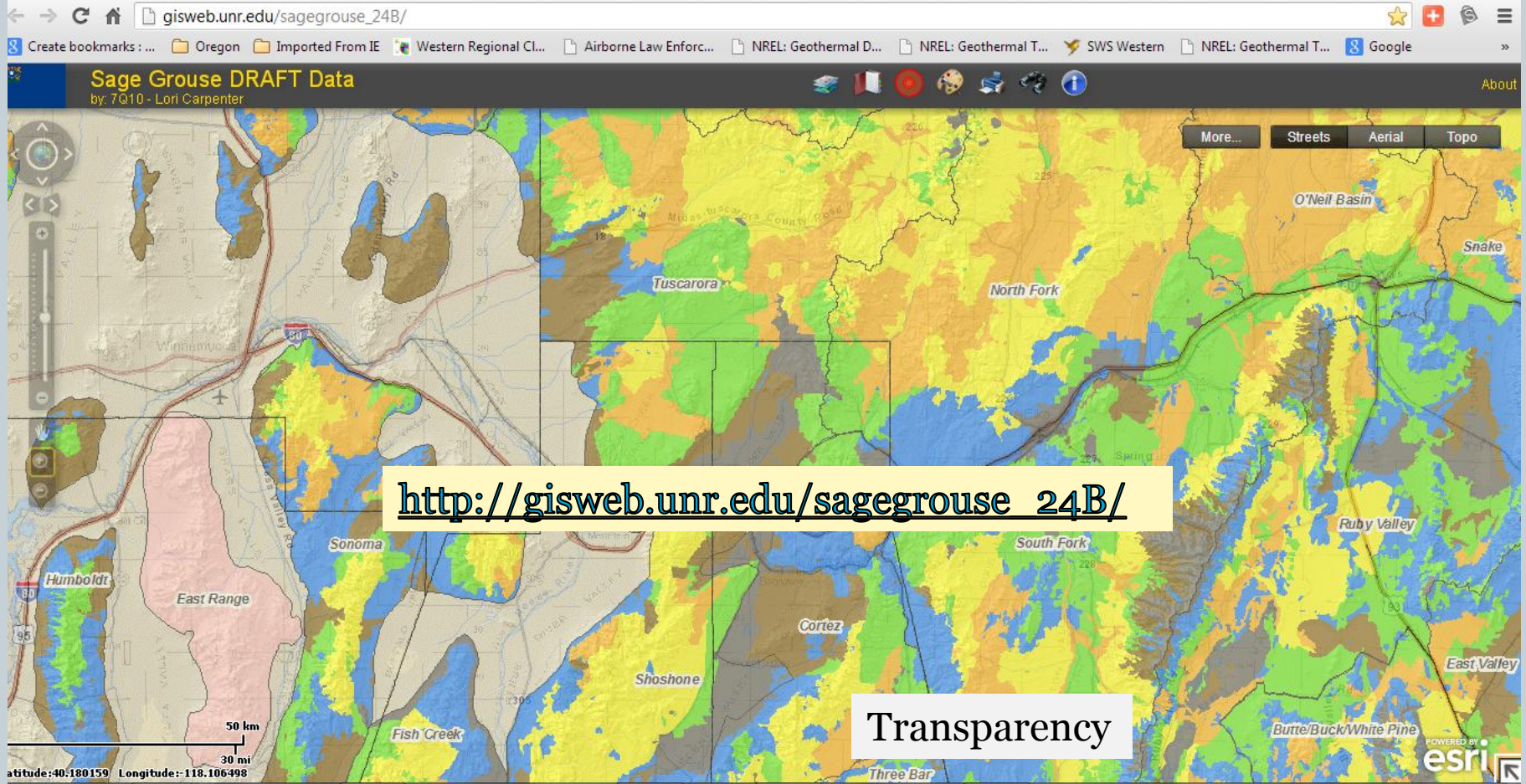
PUBLIC SERVICE

**Draft Proposed Sage Brush Habitat Mitigation Banking Strategy
One Potential Solution to Increase Sage Brush Ecosystems for Lands within
Nevada - Revision 2**

July 2012



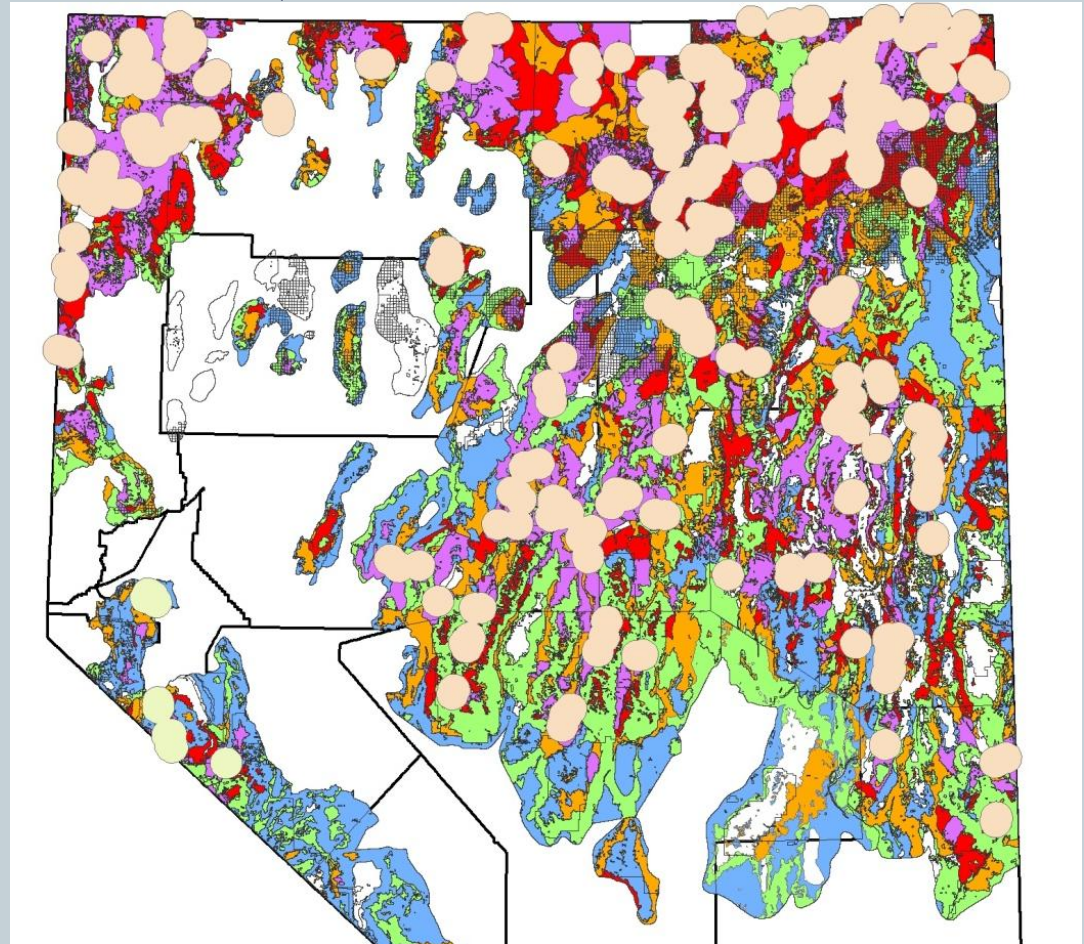
Introduction - Public Service



Response to RFI



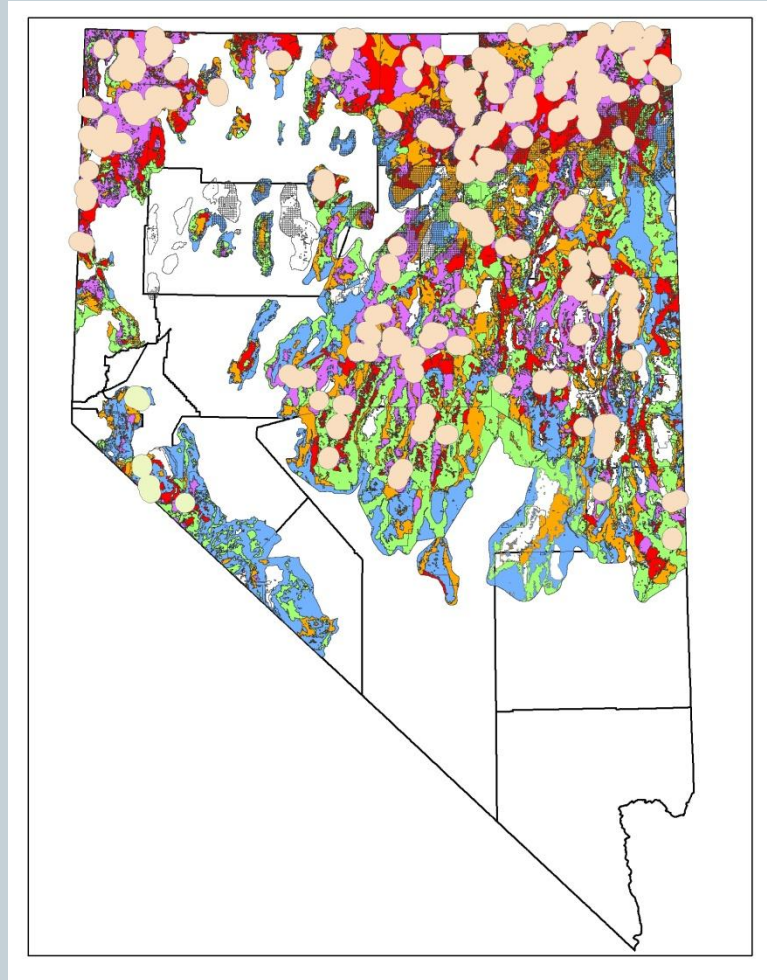
- Introduction
- Background
- 30,000 Feet
- Metrics & Models
- Summary
- Questions



Background



- NDOW/BLM Data
 - Winter Habitat & SWReGAP
- Other GIS Data Base to Analyze
 - NRCS
 - NWI
 - NHD
 - NV state Engineer
 - BLM LR 2000
 - BLM Fire
 - NNHD
 - Ownership
 - SWReGAP
 - Geology
 - Invasive Species
 - Grazing Allotments
 - Land Use
 - Et. Al.

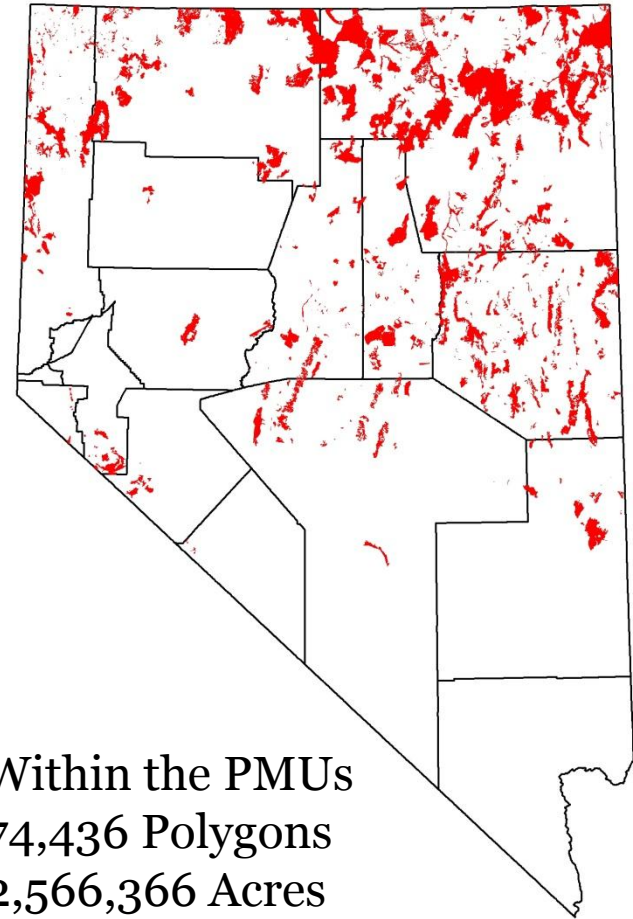


Background



- NDOW/BLM Data
 - Winter Habitat & SWReGAP
 - Elevation
 - Climate
- Habitat Corridors
- sUAS

Previous research and biological understanding that land cover, elevation and anthropogenic indices...



Within the PMUs
74,436 Polygons
2,566,366 Acres

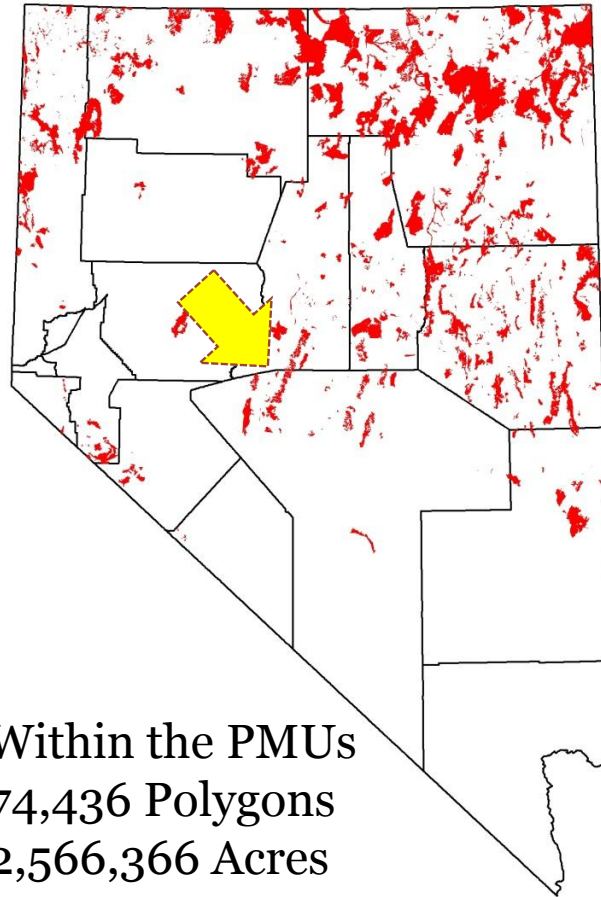


30,000 Feet



- Before you decide on a specific model for Conservation Credit System (CCS)
- CCS (currency) ...we'd better understand the data
- Metrics come from data analysis (not yet known)
- What is the current condition (Coates?)
- What is control group (Coates?)
- 7Q10 would propose that work be conducted concurrently with USGS~Coates work
- Becomes the foundation for the Nevada Sagebrush Ecosystem Work

Background



Within the PMUs
74,436 Polygons
2,566,366 Acres

30,000 Feet

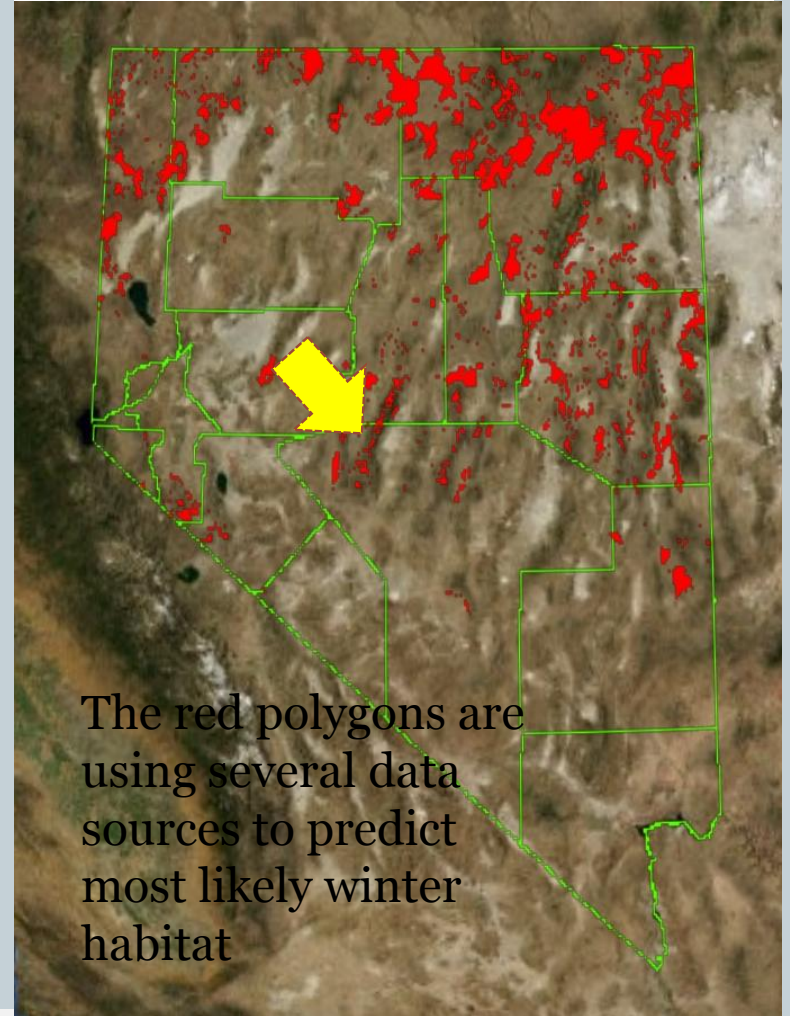


- For Example, where is the winter habitat and is there enough?
- Prepare condition assessment of the polygons from the GIS
- Refine the remote sensing analysis
- Conduct ground-truthing from sUAS in the representative groups
- Finalize the GIS layers via validation
- GIS Model consistent with Dr. Coates Team & you're at METRICS, MODELS & CURRENCY

Background



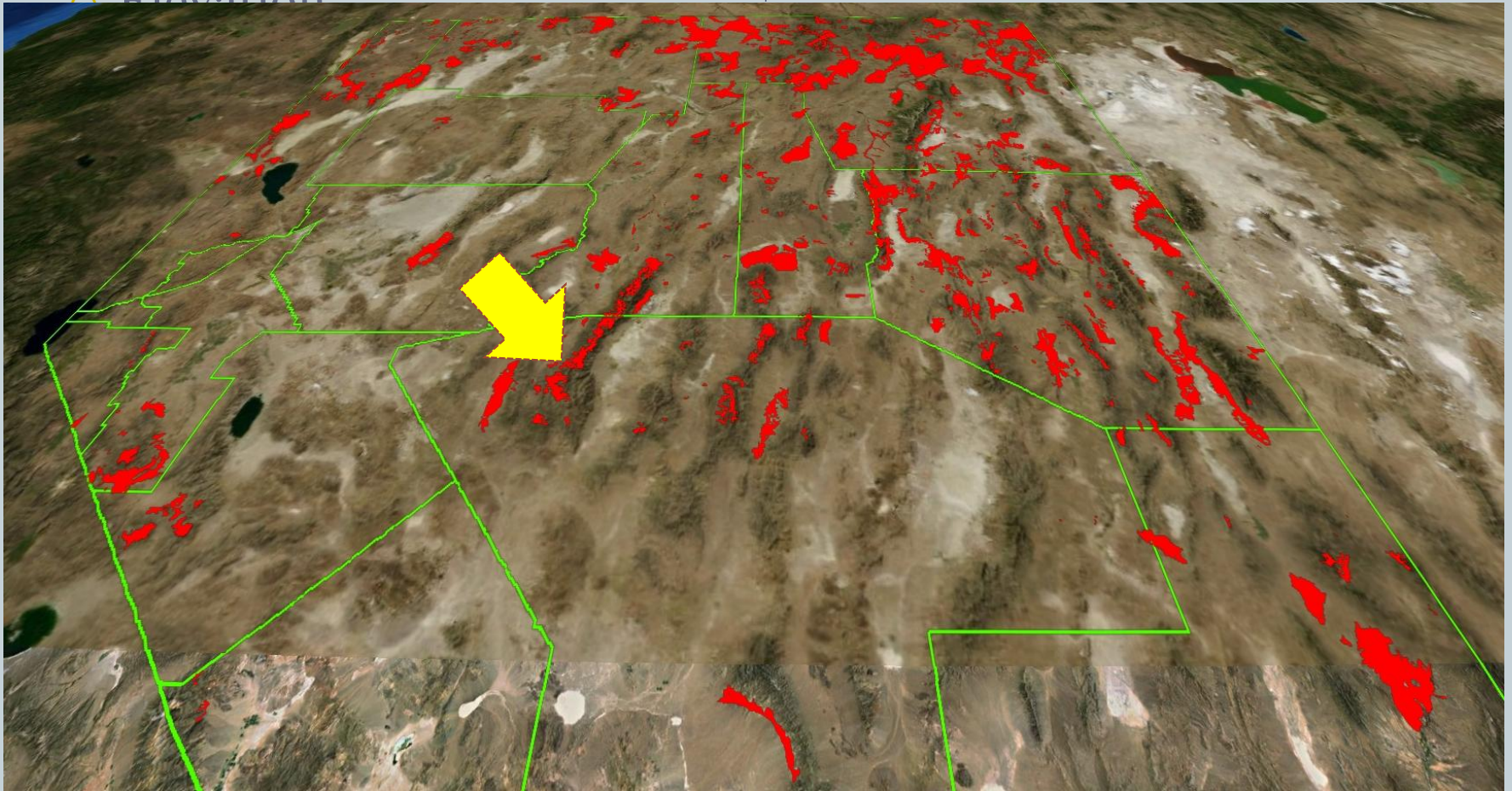
- NDOW/BLM Data
 - Winter Habitat & SWReGAP
 - Elevation
 - Climate
- What are these important?



Background



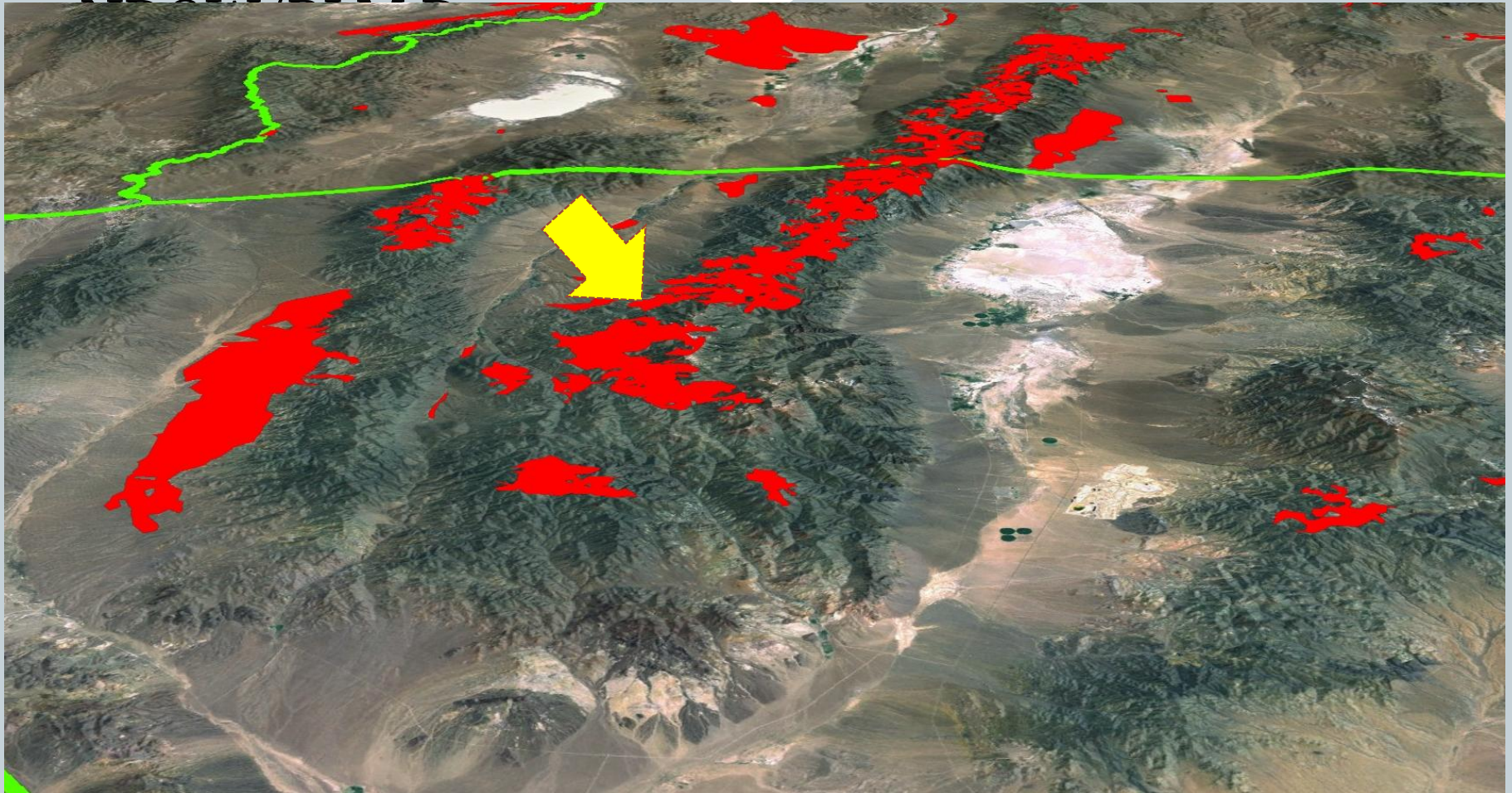
Elevation



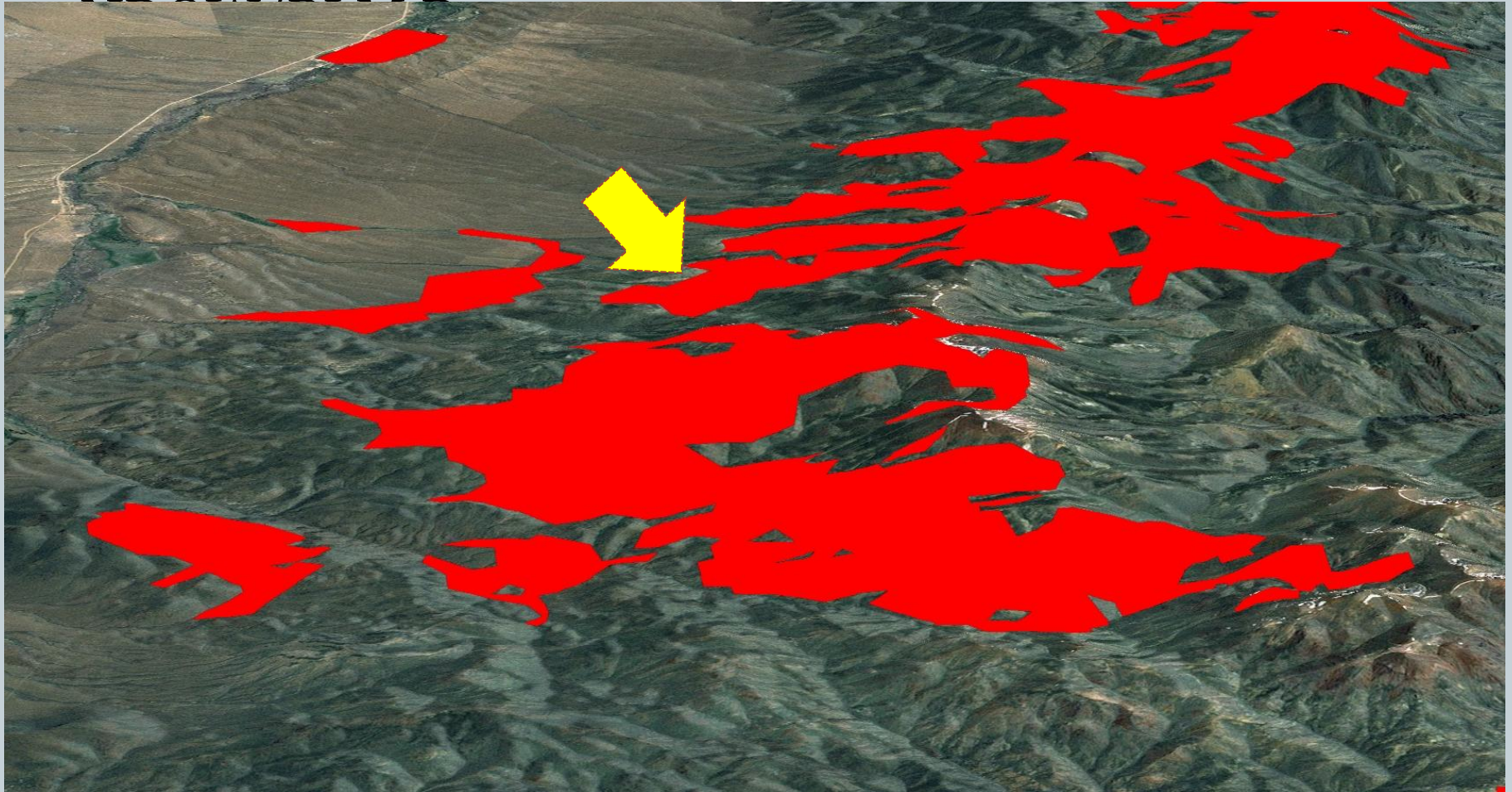
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http://gisweb.unr.edu/sagegrouse_24B/

Background



Background



Background

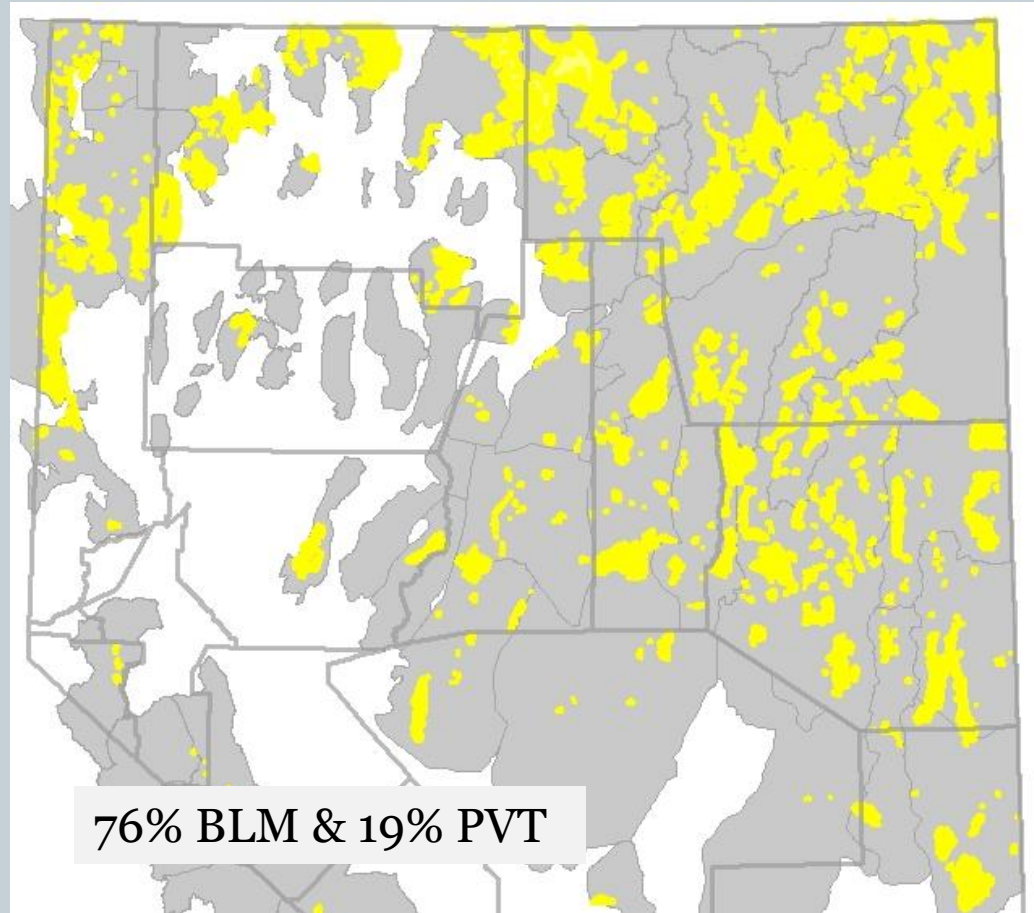


30,000 Feet



- Product from Dr. Coates, USGS
 - Map 1. with Relative Importance at a Landscape level at 30m resolution
 - Map 2. Habitat & Non-Habitat (Acres) Threshold Polygons
- We need an interim collaborative approach because the 30m resolution is still large and individual projects will need a consistent methodology to ensure overall compliance objectives are met.
 - See the submitted RFI materials.

30,000 Feet

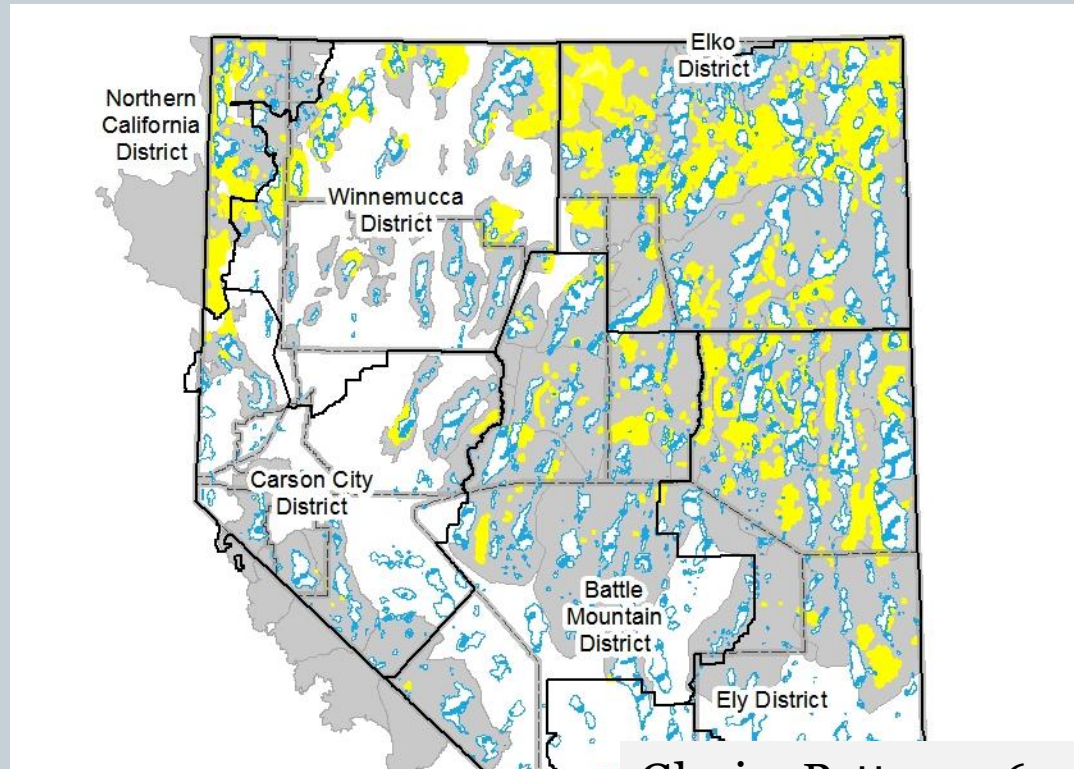


Winter Habitat & BLM Ownership

30,000 Feet



BLM Critical Winter Range Show in Yellow

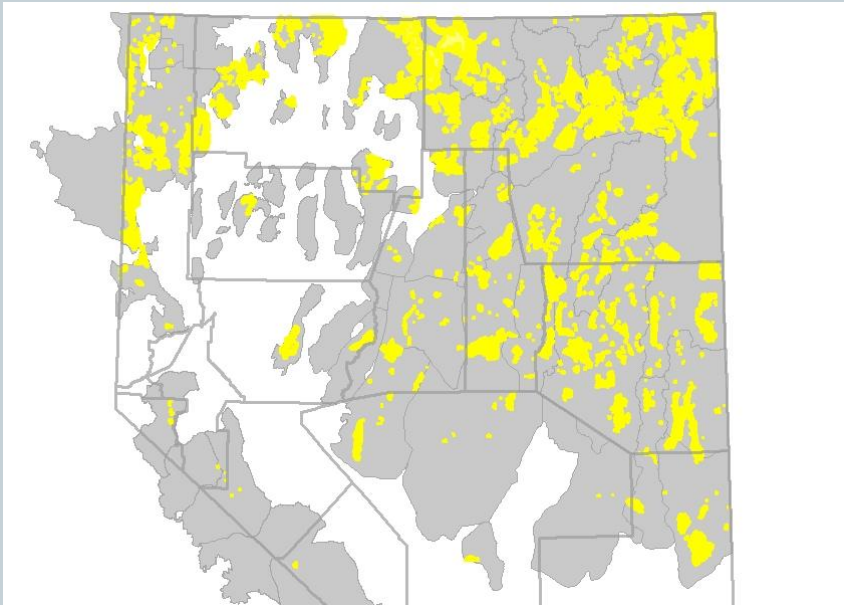


Glacier Pattern >6,400 Ft MSL
Yellow 4,500 to 6,400 MSL

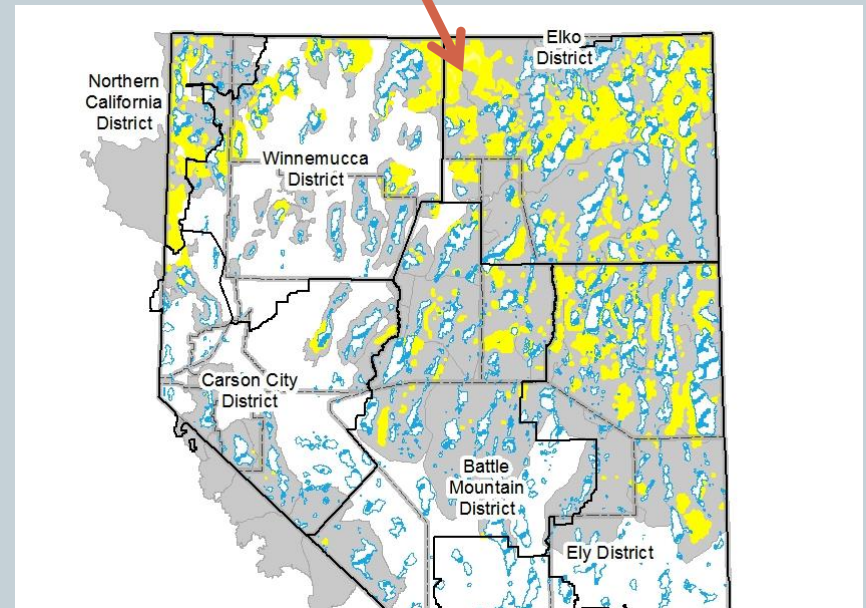
From 30,000 to 3,000 Feet



4,500 to 6,400



1.95M± 76%



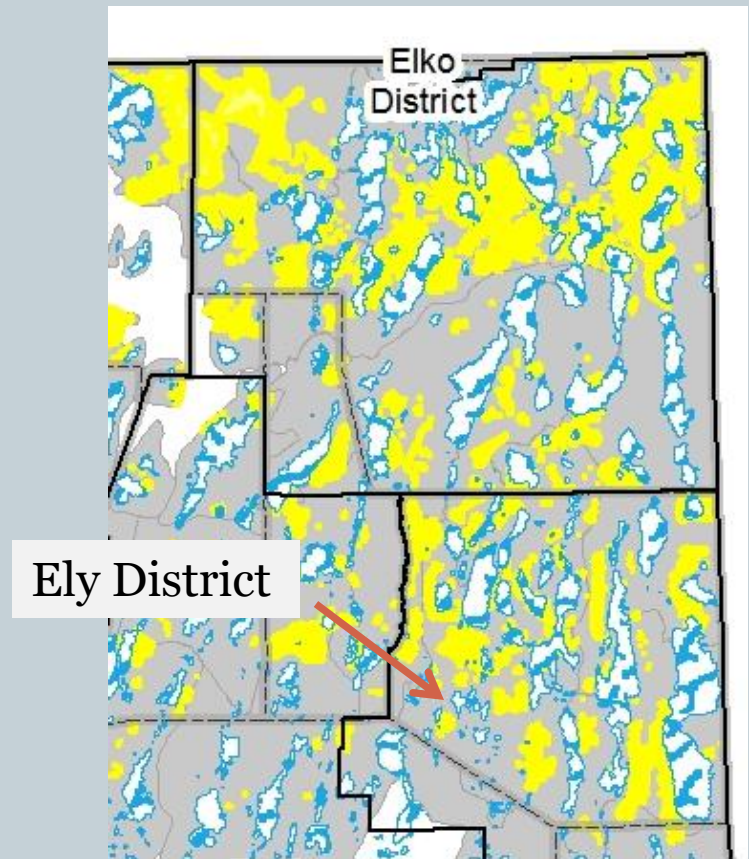
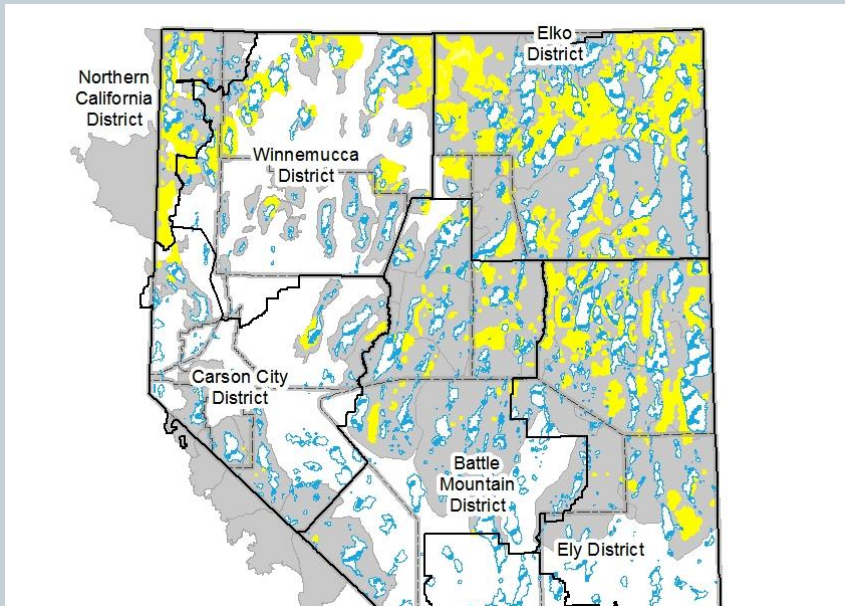
1.88M± 73%



From 3,000 to 300 Feet



Let's Zoom In!



From 30,000 to 300 to Metrics

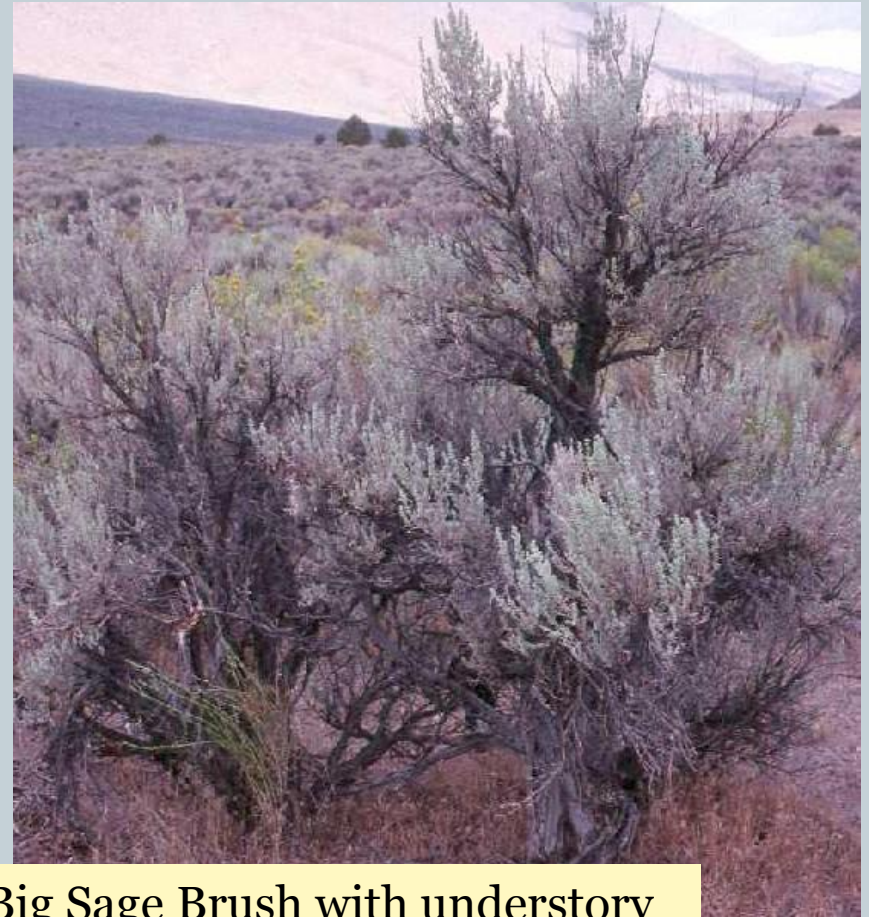


- The Coates Maps (Map 1.) will identify the selection probability at a 30M resolution and the CCS could identify what's in the 30M square and tie back to the larger landscape to ensure consistency with the Coates threshold areas (Map 2.)
- While we can't know variables will be most important in the Coates model outcome, we know from previous research and biological understanding that land cover, elevation and anthropogenic indices exercise strong influences to the model (not to mention non-anthropogenic indices...albeit fire is generally thought to be recoverable above 6,400 feet).

Metrics & Models



- CCS can be thought of as a bank in which credits would provide for the replacement of the sage brush functions or sage grouse habitats which are lost as a result of anthropogenic impacts.



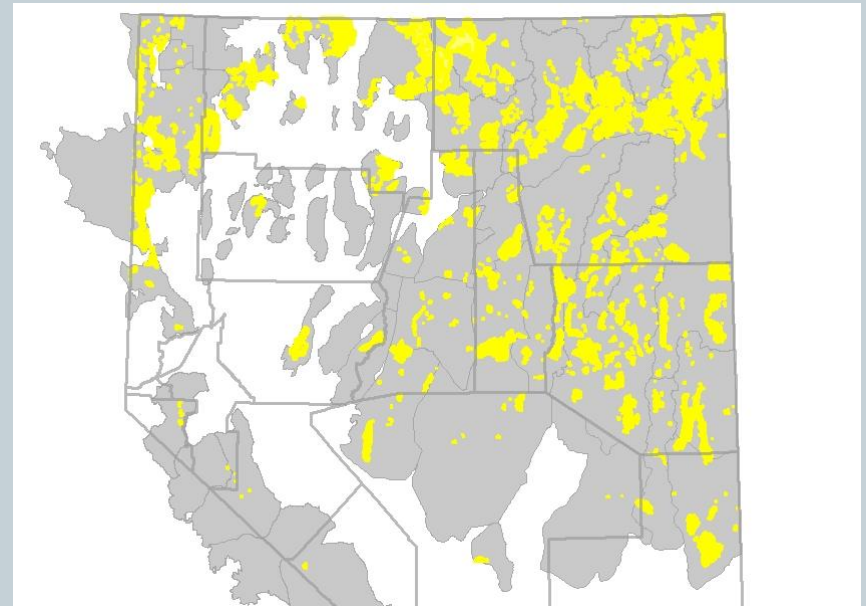
Big Sage Brush with understory

Metrics & Models



- Fair Market Value (Common Currency)
 - Quality of Habitat
 - Location of Habitat
- Habitat Equivalency
 - Quantify
- Suitability Index
 - Seasonal Habitat is generally valued differently
 - ✦ Winter habitat is more important for Females and Spring habitat for Males

Winter Habitat & BLM Ownership



76% BLM & 19% PVT

Metrics & Models



- Habitat Types (Disturbances and Impacts)
- Life Stages and weighting of life stages



Metrics & Models



- Conservation Credit System ~ a consistent, transparent framework to promote landscape level conservation projects.
 - Measureable system that allows for quantifiable results
 - Measureable system that allows for quantifiable implementation
- Credit – Currency
- Metric – variable that would be utilized to determine if the natural resource meets the credit criteria.

Metrics & Models



- **Define Mitigation.** Mitigation would occur:
 - Establishment (Creation),
 - Restoration (Re-Establishment or Rehabilitation),
 - Enhancement, and/or
 - Protection/Maintenance (Preservation) activities

- **Mitigation Actions**
 - Fire Suppression
 - Predation
 - Weed/Abatement/Vegetation management
 - Purchase of Water Right and Water Resources management
 - Pinion-Junior Management
 - Conservation Easements & Stewardship Agreements
 - Sagebrush Seed and Plant Materials



Summary

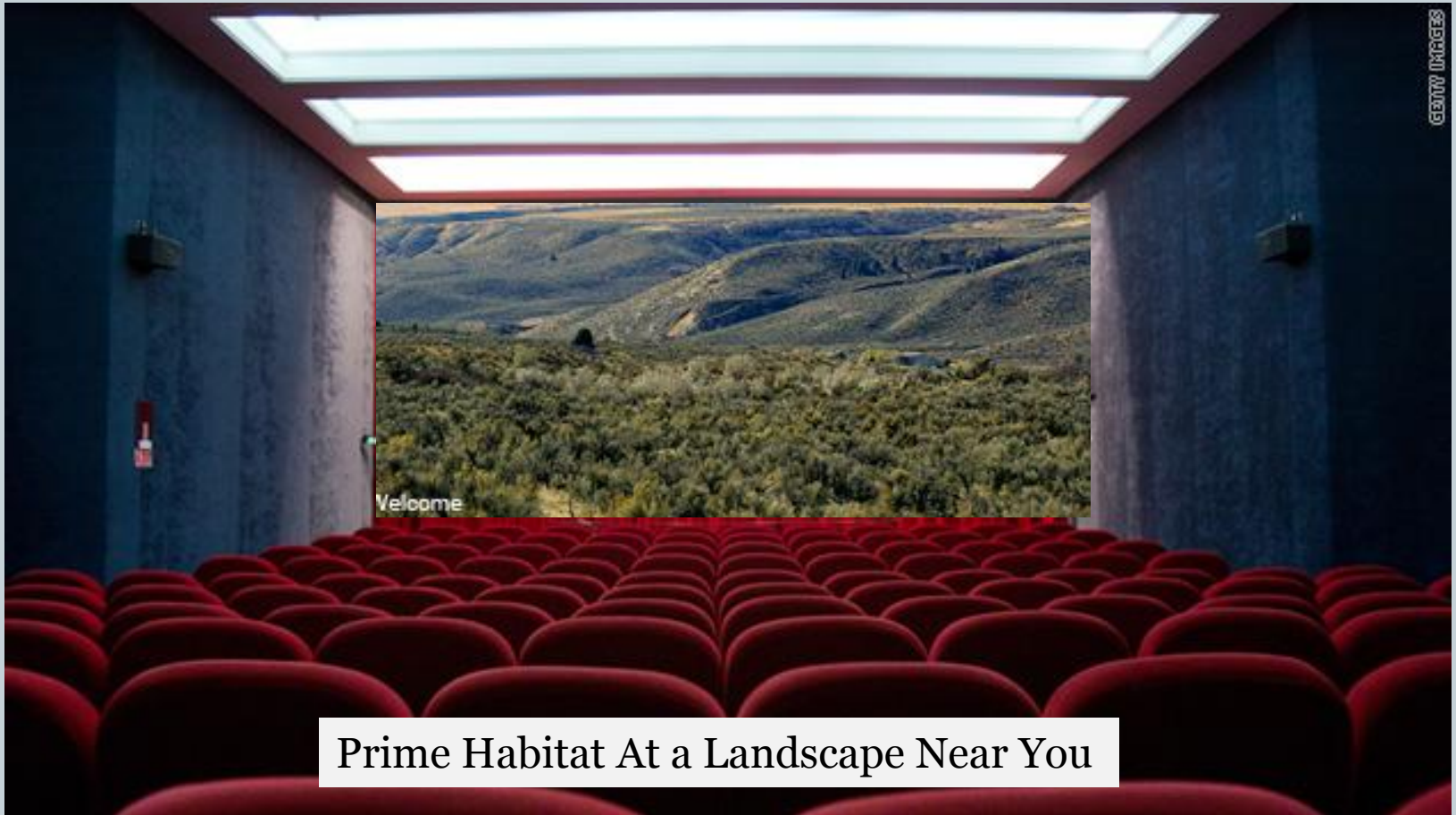


- You have a lot to consider ~ Congratulations!
- You're going to be asked to consider many Models and various metrics for a CCS ...Currency
- Consider a better understanding of the data as demonstrated herein
- Select a Currency, a Model that compliments the Coates Work
- Thank You



Wyoming Big Sagebrush

Questions



Prime Habitat At a Landscape Near You